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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application of:	Nicholls	Confirmation No.:	1945
Serial No.:	09/644,937	Art Unit:	1631
Filed:	August 23, 2000	Examiner:	Marschel, Ardin H.
For:	METHOD FOR DETERMINING A SHAPE SPACE FOR A SET OF MOLECULES USING MINIMAL METRIC DISTANCES	Attorney Docket No:	61191-0003-US (formerly 9476- 003-999)

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure provisions of 37 C.F.R. §1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ A list of all patents, publications, applications, or other information submitted for consideration by the office.
- 1b. A legible copy of :
  - ☐ Each U.S. patent application publication and U.S. and foreign patent;
  - ☒ Each publication or that portion which caused it to be listed on the PTO-1449;
  - ☐ For each cited pending U.S. application, the application specification including the claims, and any drawing of the application, or portion of the application which caused it to be listed on the PTO-1449 including any claims directed to that portion;
  - ☒ all other information or portion which caused it to be listed on the PTO-1449.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or PCT International Search Report.
- 1d. ☐ Explanations of relevancy (ATTACHMENT 1(d), hereto) or English language abstracts of the non-English language publications.

2. ☒ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(b):
- ☐ Within three months of the filing date of a national application other than a continued prosecution application under §1.53(d);
  - ☐ Within three months of the date of entry of the national stage as set forth in §1.491 in an international application;
  - ☐ Before the mailing of the first Office action on the merits;
  - ☒ Before the mailing of a first Office action after the filing of a request for continued examination under §1.114.
3. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(c) after the period specified in 37 C.F.R. §1.97(b), but before the mailing date of any of a final action under 37 C.F.R. §1.113, a notice of allowance under 37 C.F.R. §1.311 or an action that otherwise closes prosecution in the application.

*(Check either Item 3a or 3b)*

- 3a. ☐ The Certification Statement in Item 5 below is applicable. Accordingly, no fee is required.
- 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) in accordance with 37 C.F.R. §1.97(c) is:
- ☐ enclosed
  - ☐ to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no.).

*(Item 3b to be checked if any reference known for more than 3 months)*

4. ☐ This Information Disclosure Statement is filed under 37 C.F.R. §1.97(d) after the period specified in 37 C.F.R. §1.97(c), but on or before the date of payment of the issue fee.

*(Check either Item 4a or 4b)*

- 4a. ☐ The Certification Statement in Item 5 below is applicable.
- 4b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:
- ☐ enclosed.
  - ☐ to be charged to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. ).
5. ☐ Certification Statement (applicable if Item 3a or Item 4a is checked)

*(Check either Item 5a, 5b or 5c)*

- 5a. ☐ In accordance with 37 C.F.R. §1.97(e)(1), it is certified that each item of information contained in this Information Disclosure Statement was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- 5b. ☐ Each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not **received** by any individual

designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.

- 5c. ☐ Pursuant to 37 C.F.R. §1.704(d), each item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart application, and the communication was not **received** by any individual designated in 37 C.F.R. §1.56(c) more than thirty days prior to the filing of this information disclosure statement.
6. ☐ Copies of each cited U.S. patent and each U.S. patent application publication are not enclosed pursuant to the USPTO OG Notice dated 05 August 2003 waiving the requirement under 37 C.F.R. 1.98(a)(2)(i) for U.S. patent applications filed after June 30, 2003.
7. ☐ This application is a continuation application under 37 C.F.R. §1.53(b) or (d).

*(Check appropriate Items 7a, 7b and/or 7c)*

- 7a. ☐ A Petition to Withdraw from issue under 37 C.F.R. §1.313(b)(5) is concurrently filed herewith.
- 7b. ☐ Copies of publications listed on Form PTO-1449 from prior application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_, of which this application claims priority under 35 U.S.C. §120, are not being submitted pursuant to 37 C.F.R. §1.98(d).
- 7c. ☐ Copies of the publications listed on Form PTO-1449 were not previously cited in prior application Serial No. \_\_\_\_\_, filed on \_\_\_\_\_, and are provided herewith.
8. ☐ This is a Supplemental Information Disclosure Statement. (Check Item 8a)
- 8a. ☐ This Supplemental Information Disclosure Statement under 37 C.F.R. §1.97(f) supplements the Information Disclosure Statement filed on \_\_\_\_\_. A bona fide attempt was made to comply with 37 C.F.R. §1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental Information Disclosure Statement can be considered as if properly filed on \_\_\_\_\_.
9. ☐ In accordance with 37 C.F.R. §1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:

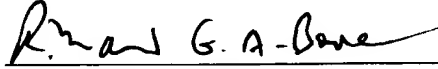
*( Check Item 9a, 9b, or 9c)*

- 9a. ☐ satisfied because all non-English language publications were cited on the enclosed English language copy of the PCT International Search Report or the search report from a counterpart foreign application indicating the degree of relevance found by the foreign office.
- 9b. ☐ set forth in the application.
- 9c. ☐ enclosed as an attachment hereto.
10. ☒ The Commissioner is authorized to charge any additional fee required or credit any overpayment for this Information Disclosure Statement and/or Petition to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310 (order no. 61191-0003-US).

11. ☒ No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than a search report of a foreign counterpart application or PCT International Search Report if submitted herewith). 37 C.F.R. §§1.97(g) and (h).

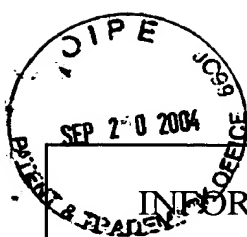
Respectfully submitted,

Date: September 20, 2004



Richard G. A. Bone  
Limited Recognition Under 37 C.F.R. § 10.9(b)  
(Copy of Certificate attached hereto)

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# INFORMATION DISCLOSURE CITATION

PTO-1449

## Complete If Known

Application Number	09/644,937
Filing Date	August 23, 2000
First Named Inventor	Nicholls
Art Unit	1631
Examiner Name	Marschel, Ardin
Attorney Docket Number	61191-0003

Sheet	1	of	3
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## U.S. PATENT DOCUMENTS

Examiner Initials	Document Number Number - Kind Code <sup>1</sup>	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Class	Subclass	Filing Date if Appropriate

## FOREIGN PATENT DOCUMENTS

Examiner Initials	Foreign Patent Document Country Code <sup>2</sup> - Number <sup>3</sup> - Kind Code <sup>4</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Class	Subclass	Translation	
						Yes	No

## OTHER NON PATENT LITERATURE DOCUMENTS

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published
	Havel and Wüthrich, "A Distance Geometry Program for Determining the Structures of Small Proteins and Other Macromolecules from Nuclear Magnetic Resonance Measurements of Intramolecular <sup>1</sup> H- <sup>1</sup> H Proximities in Solution", <i>Bulletin of Mathematical Biology</i> , Vol. 46, No. 4, 673-698, (1984).
	Weiner, <i>et al.</i> , "A Distance Geometry Study of Ring Systems: Application to Cyclooctane, 18-Crown-6, Cyclododecane and Androstanedione", <i>Tetrahedron</i> , Vol. 39, No. 7, 1113-1121, (1983).
	Crippen, <i>et al.</i> , "Use of Augmented Lagrangians in the Calculation of Molecular Conformations by Distance Geometry", <i>J. Chem. Inf. Comput. Sci.</i> , Vol. 28, 125-128, (1988).
	Crippen and Havel, "Stable Calculation of Coordinates from Distance Information", <i>Acta Cryst.</i> , Vol. A34, 282-284, (1978).
	Havel, <i>et al.</i> , "The Theory and Practice of Distance Geometry", <i>Bulletin of Mathematical Biology</i> , Vol. 45, No. 5, 665-720, (1983).

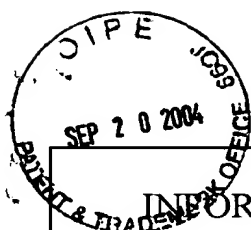
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>2</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language Translation is attached.

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1-PA/3516480.1



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				<b>Application Number</b>	09/644,937
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				<b>Art Unit</b>	1631
				<b>Examiner Name</b>	Marschel, Ardin
<b>Sheet</b>	2	of	3	<b>Attorney Docket Number</b>	61191-0003

	Spellmeyer, <i>et al.</i> , "Conformational Analysis Using Distance Geometry Methods", <i>Journal of Molecular Graphics and Modelling</i> , Vol. 15, 18-36, (1997).
	Sheridan, <i>et al.</i> , "The Ensemble Approach to Distance Geometry: Application to the Nicotinic Pharmacophore" <i>J. Med. Chem.</i> , Vol. 29, 889-906, (1986).
	Peishoff, <i>et al.</i> , "Application of the Distance Geometry Algorithm to Cyclic Oligopeptide Conformation Searches", <i>Biopolymers</i> , Vol. 30, 45-56, (1990).
	Wüthrich, "Protein Structure Determination in Solution by Nuclear Magnetic Resonance Spectroscopy", <i>Science</i> , Vol. 243, 45-50, (1989).
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	Kuszewski, <i>et al.</i> , "Sampling and efficiency of metric matrix distance geometry: A novel partial metrization algorithm", <i>Journal of Biomolecular NMR</i> , Vol. 2, 33-56, (1992).
	Huang, <i>et al.</i> , "Distance geometry generates native-like folds for small helical proteins using the consensus distances of predicted protein structures", <i>Protein Science</i> , Vol. 7, 1998-2003, (1998).
	Forster, <i>et al.</i> , "Application of distance geometry to 3D visualization of sequence relationships", <i>Bioinformatics Applications Note</i> , Vol. 15, No. 1, 89-90, (1999).
	Weber, "Determining Stereo-specific <sup>1</sup> H Nuclear Magnetic Resonance Assignments from Distance Geometry Calculations", <i>J. Mol. Biol.</i> , Vol. 204, 483-487, (1988).
	Newell, <i>et al.</i> , "Construction of Genetic Maps Using Distance Geometry", <i>Genomics</i> , Vol. 30, 59-70, (1995).
	Wertz, <i>et al.</i> , "A Comparison of Distance Geometry and Molecular Dynamics Simulation Techniques for Conformational Analysis of $\beta$ -Cyclodextrin", <i>Journal of Computational Chemistry</i> , Vol. 13, No. 1, 41-56, (1992).
	Blumenthal, <i>Theory and Applications of Distance Geometry</i> , Chelsea Publishing Company, (1970) (Title Page and Table of Contents only).
	Crippen and Havel, <i>Distance Geometry and Molecular Conformation</i> , Research Studies Press Ltd., (1988) (Title Page and Table of Contents only).

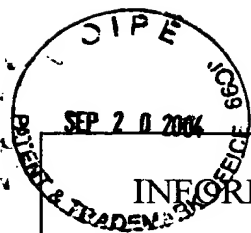
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<sup>1</sup> See Kind Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>2</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>3</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>4</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>5</sup> Applicant is to place a check mark here if English language Translation is attached.

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<b>Sheet</b>	3	of	3	<b>Attorney Docket Number</b>	61191-0003

	Crippen, <i>Distance Geometry and Conformational Calculations</i> , Research Studies Press Ltd., (1981).
	Leach, <i>Molecular Modelling</i> , Addison Wesley Longman Ltd., (1996) (Title Page, Table of Contents, and pages 426-435 only).
	"Distance Geometry", <a href="http://www.pasteur.fr/recherche/unites/Binfs/xplor/manual/node374.html">http://www.pasteur.fr/recherche/unites/Binfs/xplor/manual/node374.html</a> (last accessed, September 20, 2004).
	"Distance Geometry", <a href="http://iris12.colby.edu/~www/jme/dg.html">http://iris12.colby.edu/~www/jme/dg.html</a> (last accessed, September 20, 2004).
	Blaney, <i>et al.</i> , "DGEOM: Distance Geometry Program", QCPE Program No. 590, <i>QCPE Bulletin</i> , Vol. 10, 37-38, (1990); Quantum Chemistry Program Exchange, Indiana University, Bloomington, IN; also, DGEOM(95), further described at: <a href="http://qcpe.chem.indiana.edu">http://qcpe.chem.indiana.edu</a> (last accessed August 20, 2004).

<b>Examiner Signature</b>		<b>Date Considered</b>	
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**BEFORE THE OFFICE OF ENROLLMENT AND DISCIPLINE  
UNITED STATES PATENT AND TRADEMARK OFFICE**

**LIMITED RECOGNITION UNDER 37 CFR § 10.9(b)**

Dr. Richard G. A. Bone is hereby given limited recognition under 37 CFR §10.9(b) as an employee of Morgan, Lewis & Bockius LLP to prepare and prosecute patent applications wherein the patent applicant is the client of Morgan, Lewis & Bockius LLP, and the attorney or agent of record in the applications is a registered practitioner who is a member of Morgan, Lewis & Bockius LLP. This limited recognition shall expire on the date appearing below, or when whichever of the following events first occurs prior to the date appearing below: (i) Dr. Richard G. A. Bone ceases to lawfully reside in the United States, (ii) Dr. Richard G. A. Bone's employment with Morgan, Lewis & Bockius LLP ceases or is terminated, or (iii) Dr. Richard G. A. Bone's current Employment Authorization card expires.

This document constitutes proof of such recognition. The original of this document is on file in the Office of Enrollment and Discipline of the U.S. Patent and Trademark Office.

**Expires: November 11, 2004**

  
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Harry I. Moatz  
Director of Enrollment and Discipline